REMARKS/ARGUMENTS

Claims 1, 2, 9, 10, 17, 18 and 19 were amended. Claims 6-8 and 14-16 were previously withdrawn, as being drawn to a non-elected invention.

Claims 18 and 19 were amended to specify that the computer program and data signal are stored in a computer readable memory device. It is believed that these claim amendments should overcome the 35 USC 101 rejection.

The Examiner rejected independent claims 1, 9, 17, 18 and 19 under 35 USC 102(e) as being anticipated by Junqua (6,598,018 B1). The Examiner argued that Junqua teaches all the steps of claim 1. We respectfully disagree with the Examiner's interpretation of the cited text references in Junqua.

In particular, the Examiner claimed that the step of receiving a symbolic representation of a free continuous speech language is described by Junqua in column 1, lines 55-65, column 2, lines 12-18. Junqua refers to "natural language interface" and "natural language parser" in the mentioned citations. However, Junqua makes no reference to whether or not the speech is "free and continuous speech". From the context of Junqua's system usage and the examples given in column 3 lines 59-67 to column 4 lines 1-16, it is understood that Junqua's system is based on simple command responses that fill slots in predefined templates. Essentially as Junqua claims, " the parser operates on a goal-oriented basis identifying keywords and phrases from the recognized speech and using those recognized words and phrases to fill slots in predefined templates or frames that represent different goal-oriented tasks." (column 1, lines 65-67 to column 2 lines 1-3). In order for the Junqua system to be able to decipher "free and continuous speech" it would require infinite number of predefined templates to be able to address every possible combination of words that can occur in "free and continuous speech". This is technologically impossible because it requires computing power unavailable at this time and extended processing time that would not allow for real time response. In other

words, Junqua's system can convert small verbal command inputs to physical action such as turning on a radio or giving directions to a specific destination , but cannot understand "free and continuous speech" and convert it into a document or a file. As was mentioned before, the problem with these prior art command based language forms is that they rely on limited number of keywords describing the key concepts/ templates for developing computer understanding. Furthermore, Junqua's system cannot address understanding problems related to metaphors and polysemy, i.e., different meanings of similarly sounding words leading to confusing statements or misunderstandings. For example, instead of saying "turn on the radio" one could say "hit it" which in the music context would indicate "turn on the music". However, this would not be understood by the Junqua system.

 Unlike Junqua's system and other command processors, the present invention can not only process commands, but also understand "free and continuous speech" using various context-sensitive dictionaries. This type of computer understanding of the "free and continuous speech" manifest itself in a set of computer generated instructions that include calculations, textual and graphical representations and computer generated utterances delivered to the user as spoken language. In the automobile example mentioned in the present application, a user can actually negotiate for a price of a car using the present invention as indicated on page 10 line 13, "Will you take $32,500?" .

This computer understanding of the "free and continuous speech" utterances is possible because of the use of <u>hierarchically ordered context-sensitive dictionaries defining subject areas, sub-subject areas, program modules, arguments, and argument values</u>.

The Examiner further argued that Junqua teaches (in column 2, lines 24-43 and column 5 lines 3-35) the step of the computer generator receiving inputs from context-sensitive subject area dictionary, context-sensitive subdictionary, context-sensitive program module subdictionary, context sensitive argument subdictionary and context-sensitive value subdictionary. Referring to column 2, lines 32-37, Junqua refers to context module A representing a navigation module such as a map database, context module B provides

navigation information from an alternate source, such as a global positioning system (GPS) receiver and context module C provides information to the natural language parser for facilitating identification of keywords and phrases. We respectfully disagree with the Examiner's interpretation of Junqua's context modules A, B, C as being considered to be hierarchically organized context-sensitive subject area dictionaries, context-sensitive subdictionaries, context-sensitive program module subdictionaries, context sensitive argument subdictionary and context-sensitive value subdictionary. Although Junqua's machine may be able to search the context of module A B or C there is no indication of any type of hierarchically organized search that relies on hierarchically organized context-sensitive dictionaries. In other words, module A, module B and Module C are not hierarchically organized context-sensitive dictionary and subdictionary systems. They are merely independent databases used to extract information.

As we mentioned in our previous response, the term "context sensitive" has a particular meaning in the field of linguistics and computer science. According to Webster's New Millennium Dictionary, context-sensitive is defined as "in linguistics or computer syntax, pertaining to an element whose value depends on the context in which it appears." Junqua does not make any reference to a dictionary or to a context sensitive dictionary. Furthermore, as described in the related provisional application 60/274,786, segment P1/3 pages 2-4, " a direct" method of word recognition by "dragging" each word along a dictionary or a database is a slow and inefficient process for developing computer understanding. The present invention overcomes the inefficiencies of the direct word comparison prior art methods by structuring the data in subject areas, sub-subject areas, program modules, arguments and values and by utilizing context-sensitive dictionaries for each subject area, sub-subject area, program module, argument and value, respectively for developing understanding of a free and continuous speech natural language utterance by a computer.

The Examiner further argued that Junqua teaches (in column 2, lines 24-43) the steps of determining a subject area identifier, a program module identifier, an argument identifier

and a value identifier. With all due respect, we fail to see any such teachings in the cited references or the entire Junqua patent.

In summary, the differences between the present invention as claimed in claims 1, 9, 17, 18 and 19 and the Junqua patent include:
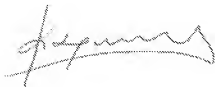
- Production of computer instructions from unrestricted "free and continuous speech natural language utterances".
- Use of hierarchically organized context-sensitive dictionaries including subject areas, sub-subject areas, program modules, arguments and values,
- Computer understanding based on direct comparison of the parsed natural language utterance with the hierarchically organized context-sensitive dictionaries in a stepwise process for identifying a subject area identifier, a module identifier, an argument identifier and a value identifier.
- Production of computer instructions based on the subject area identifier, the module identifier, the argument identifier and the value identifier.

Based on these differences it is believed that the 35 USC 102 rejection of claims 1, 9, 17, 18 and 19 based on Junqua is overcome and claims 1, 9, 17, 18 and 19 should be allowable. Claims 2-5 depend upon claim 1 and claims 10-13 depend upon claim 9. Since claims 1 and 9 are patentably distinguishable from Junqua they should also be patentably distinguishable from Junqua and should be also allowable.

In view of the above, it is submitted that claims 1-5, 9-13, 17, 18, 19 are in condition for allowance. Reconsideration of the rejection is requested and allowance of these claims at an early date is solicited

If this response is found to be incomplete, or if a telephone conference would otherwise be helpful, please call the undersigned at 781-235-4407

Respectfully submitted,

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